

小红书在容器环境的CD实践

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小红书



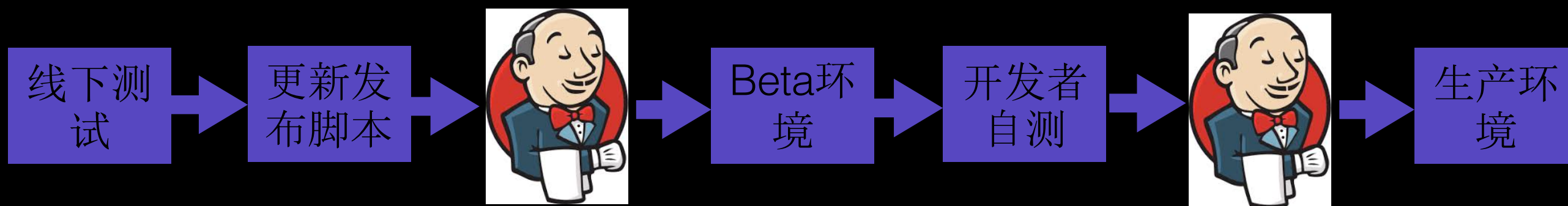
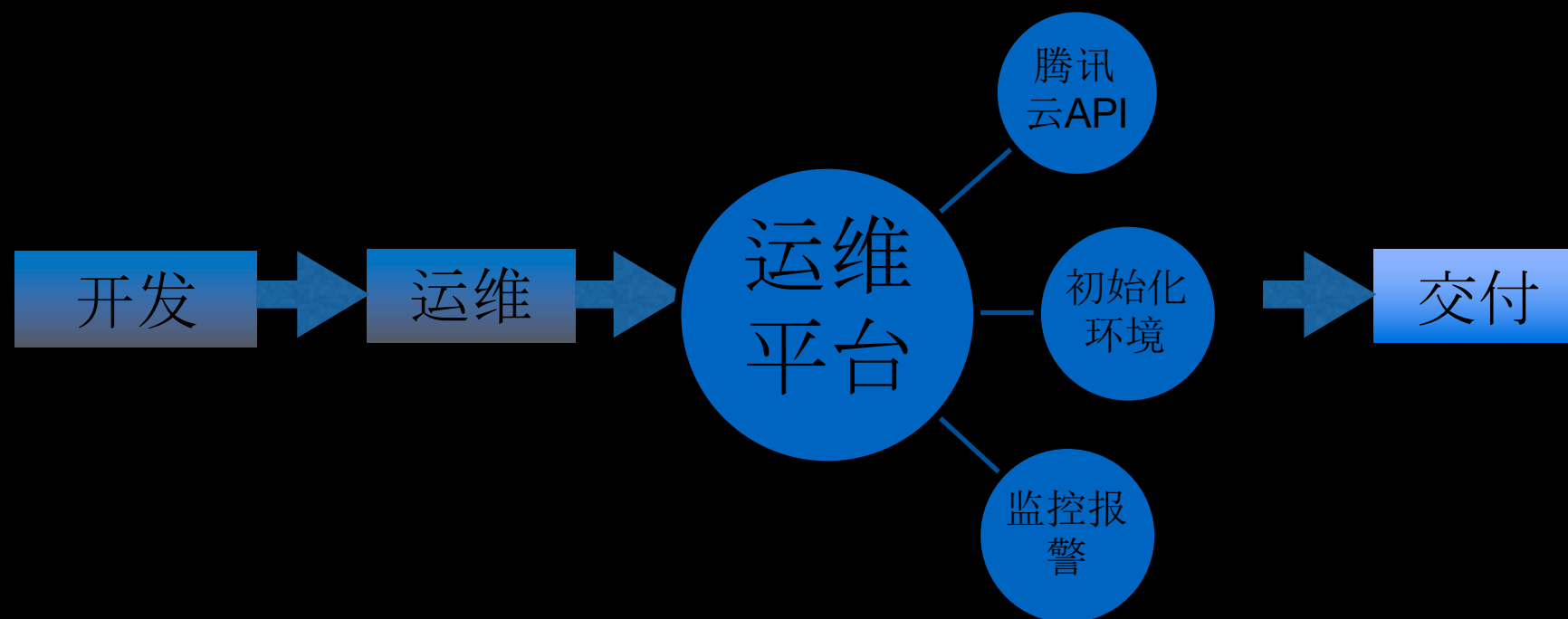
从社区到电商

笔记的相关商品
笔记中的商品标签
基于用户真实反馈

小团队 – 资源有限 – 开源优先 – 功能补缺



资源分配



重构”从代码到上线”流程

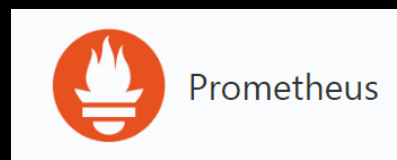
”Canary”发布策略

线上快速回退

实践自动化测试

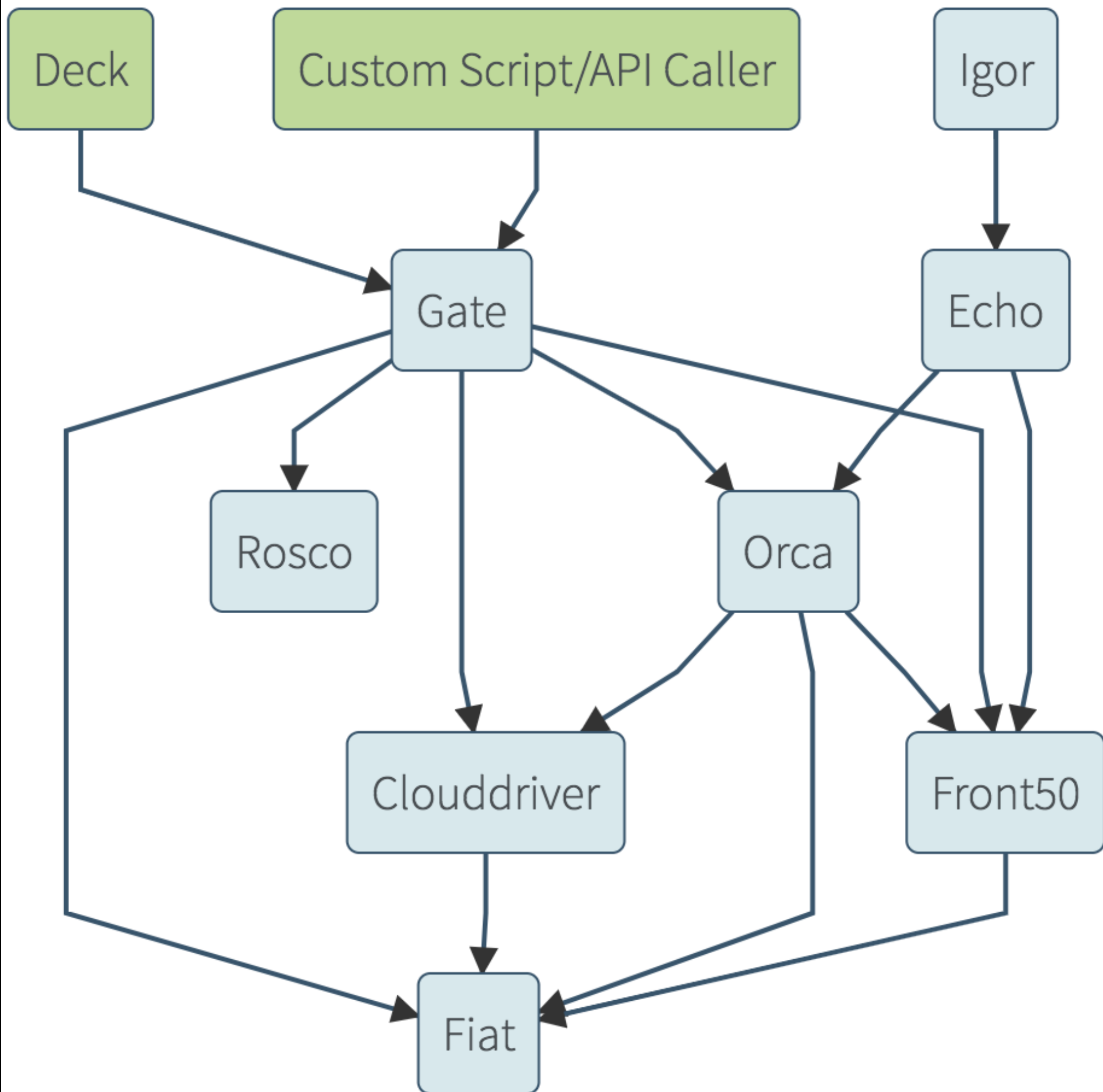
服务器等资源管理透明化

用到的技术





- Netflix 开源项目
- 开放性和集成能力
- 较强的pipeline表达能力
- 强大的表达式
- 界面友好
- 支持多种云平台



api

PIPELINES 2

CLUSTERS

LOAD BALANCERS

SECURITY GROUPS

PROPERTIES

TASKS

CONFIG

Filters

Clear All

Unpin

SEARCH

ACCOUNT

- ☐ prod
☐ test

REGION

- ☐ eu-west-1
☐ us-east-1
☐ us-west-2

STACK

- ☐ ci
☐ debug
☐ delivery
☐ int
☐ mayank
☐ noss
☐ perf
☐ playbackmonkey
☐ primer
☐ primerci
☐ prod
☐ sandbox
☐ squeeze
☐ staging
☐ test
☐ testdata

Clusters

Show

☒ Instances☐ with details

Create Server Group

PROD

api-prod

1184 / 1 : 99%

EU-WEST-1

V159: Build: #4220

206 / 1 : 99%

US-EAST-1

V175: Build: #4220

520 / 2 : 100%

US-WEST-2

V335: Build: #4220

458 / 1 : 100%

Permalink



i-8940274d

Instance Actions

Insight

INSTANCE INFORMATION

Launched: 2015-11-14 08:09:09 PST

In: prod us-west-2b

Type: c3.8xlarge

Server Group: api-prod-v335

VPC: None (EC2 Classic)

STATUS

Discovery

Up Health Check | Status

DNS

SECURITY GROUPS

LOGS

NETFLIX CONFIGURATION

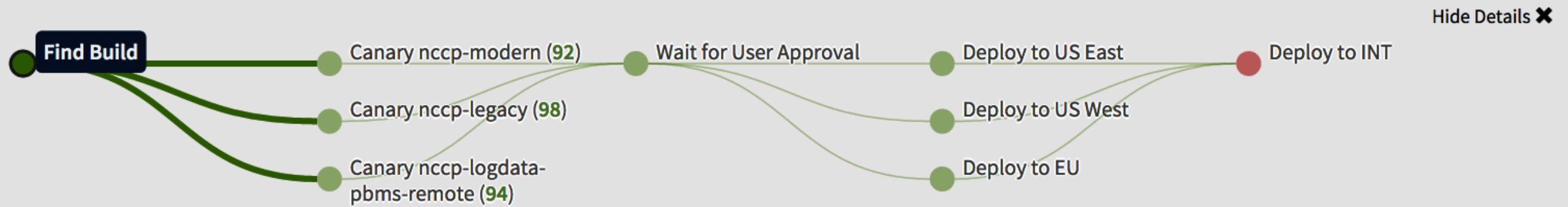
Pipelines

▼ 1 Push to PROD with Canary (modern, legacy, logdata)

Trigger: Enabled

⚙ Configure

▶ Start Manual Execution



FIND BUILD DETAILS

Step	Started	Duration	Status
Find Build	2015-11-10 08:00:03 PST	00:19	COMPLETED

✓ FIND BUILD

Jenkins Config

Task Status

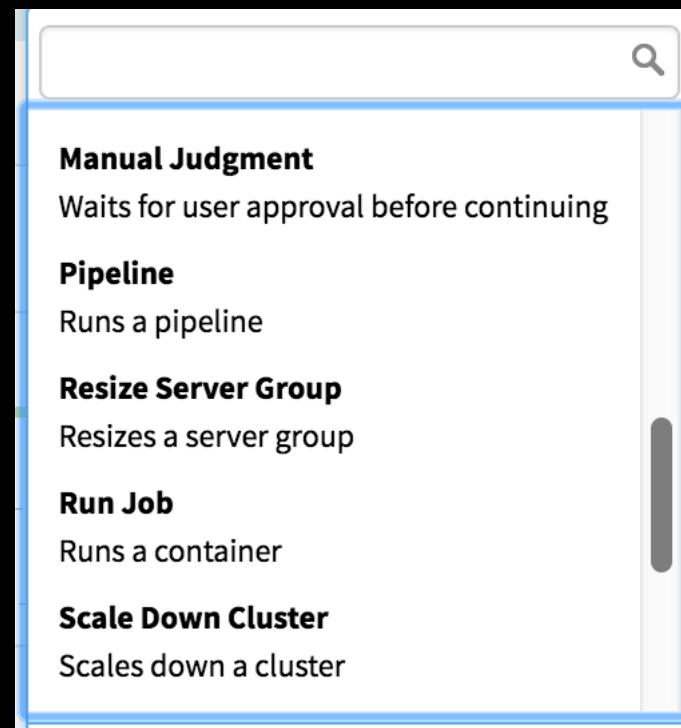
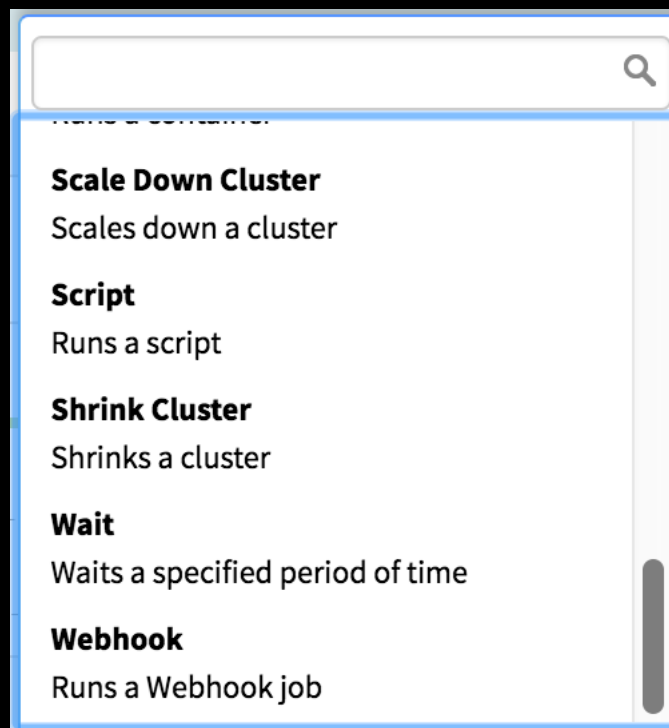
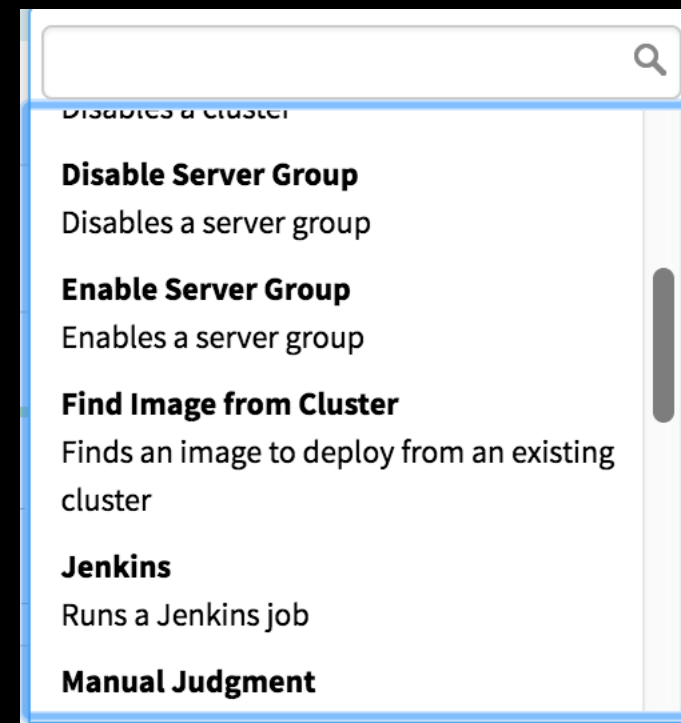
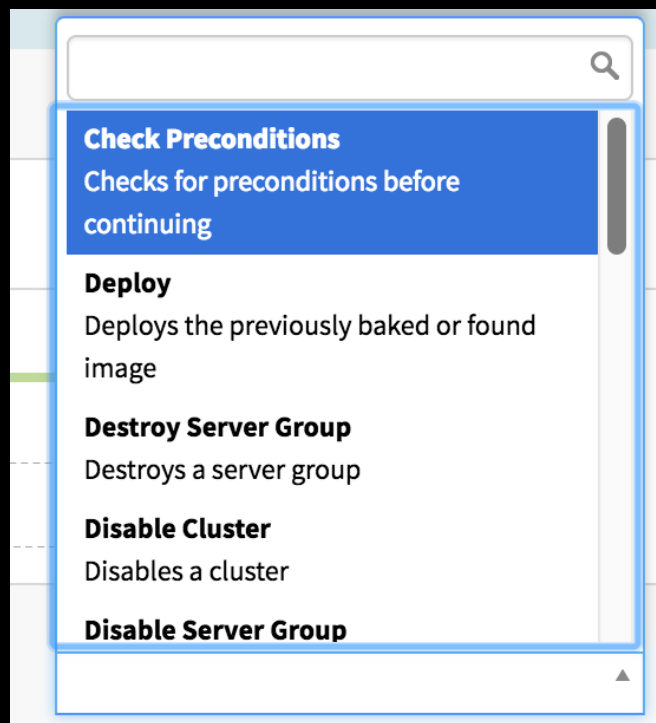
Task

- ✓ Start Jenkins Job
- ✓ Wait For Jenkins Job Start
- ✓ Monitor Jenkins Job

Duration

00:00
00:13
00:05

Pipelines - stages



表达式

Run Job Configuration

image

Tag

Commands [Expression Docs](#)

执行步骤中

Execution Options

☒ **Conditional on Expression** [Expression Docs](#)

有条件执行

Edit Precondition

Check

Expression

Fail Pipeline ☒

前置条件

表达式

Comments

`${ #stage( 'Deploy in us-west-2' )|}`

[Expression Docs](#)

Execution to specific time windows

Configurations for this stage

Run on **Expression** ⓘ

Properties

- ['id']** ▶ 9ce81ed0-6f1a-44f6-82ad-809c47bd6c58-1-Deployinwest2
- ['type']** ▶ deploy
- ['name']** ▶ Deploy in us-west-2
- ['startTime']** ▶ 1474386589661
- ['endTime']** ▶ 1474386854141
- ['status']** ▶ SUCCEEDED
- ['immutable']** ▶ false
- ['initializationStage']** ▶ false
- ['parentStageId']** ▶ 9ce81ed0-6f1a-44f6-82ad-809c47bd6c58
- ['refId']** ▶ null
- ['requisiteStageRefIds']** ▶ null
- ['syntheticStageOwner']** ▶ STAGE_AFTER
- ['scheduledTime']** ▶ 0
- ['lastModified']** ▶ null
- ['context']['healthCheckType']** ▶ EC2

pipeline自动触发

Automated Triggers

Type	CRON	Executes the pipeline on a CRON schedule
Frequency	daily	
	☐ Every 1 day	
	☒ Every week day	
Start time	10 00 CST	
Type	Select... CRON Git Jenkins Travis Pipeline ✓ Docker Registry	Executes the pipeline on an image update
Registry Name	xhs-docker-registry	
Organization	library	

Spinnaker 和 Kubernetes

Account

k8s Cluster

Instance

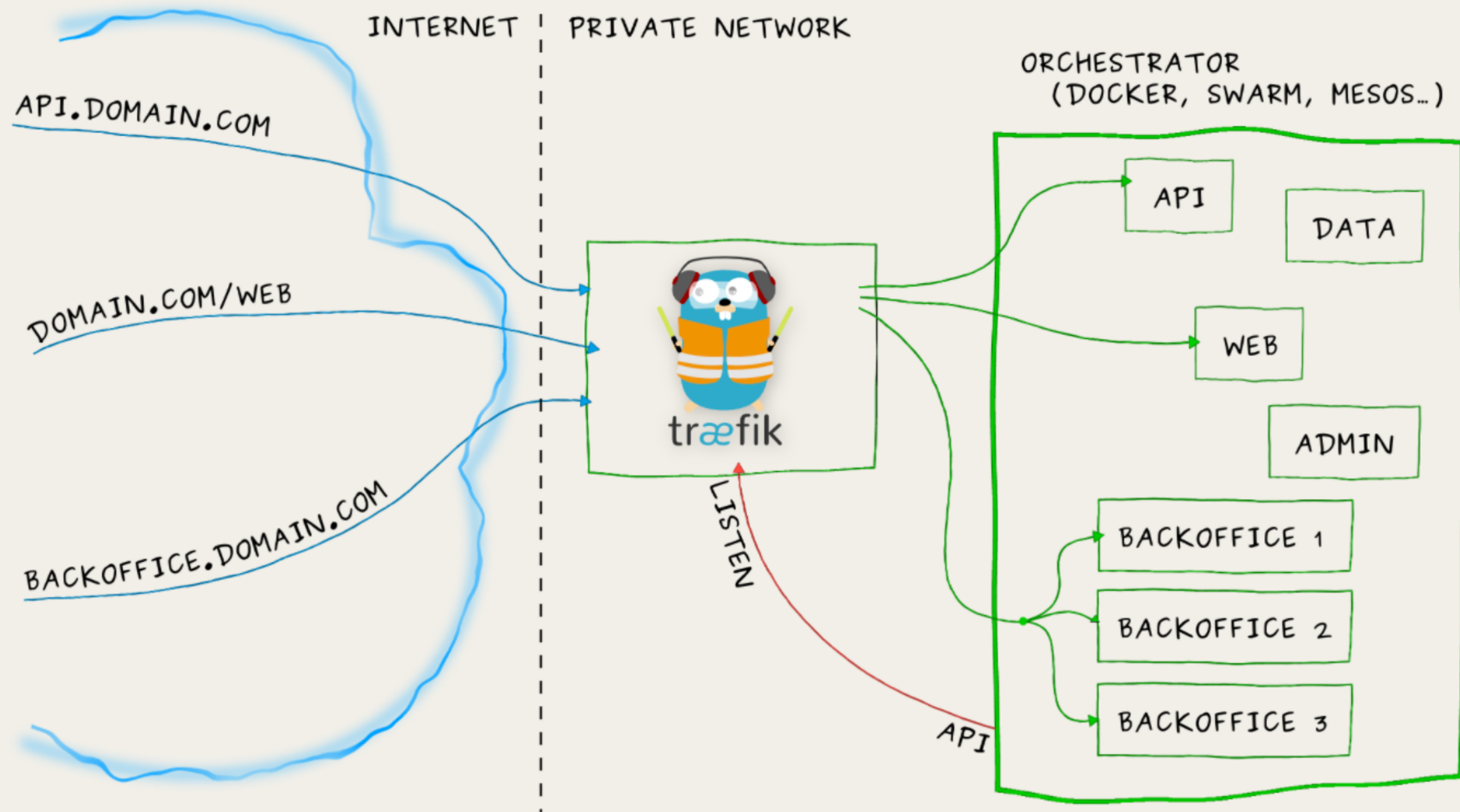
Pod

Server Group

Replica Set

Load Balancer

Service



亮点

- 配置热加载,无需重启
- 自带熔断功能
 - `traefik.backend.circuitbreaker:NetworkErrorRatio() > 0.5`
- 动态权重的轮询策略
 - `traefik.backend.loadbalancer.method:drr`

🌐 canarydemo.devops.xiaohongshu.com/

Route	Rule
/	PathPrefix:/
canarydemo.devops.xiaohongshu.com	Host:canarydemo.devops.xiaohongshu.com

http Backend:canarydemo.devops.xiaohongshu.com/ PassHostHeader Priority:1

🌐 xxx.com/v1

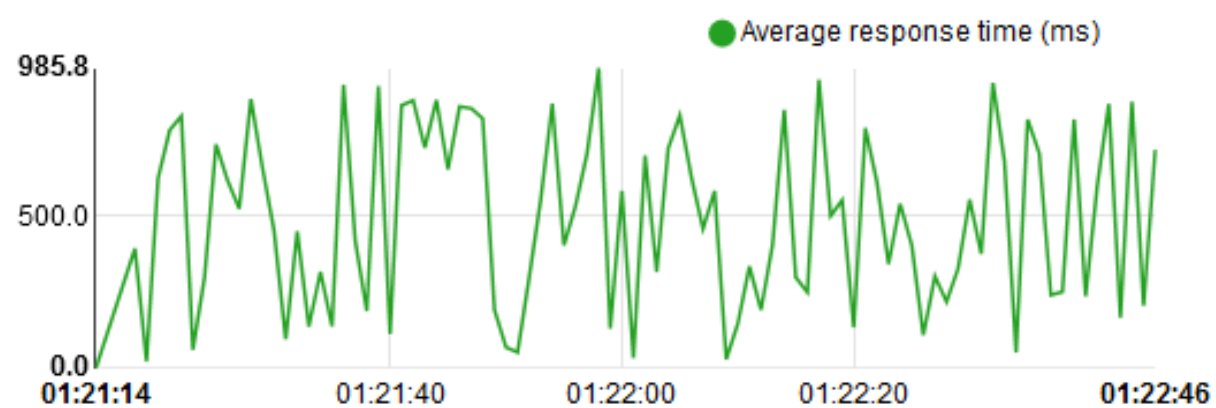
☰ canarydemo.devops.xiaohongshu.com/

Server	URL	Weight
canarydemo-main-v003-1cklj	http://192.168.0.108:80	1
canarydemo-main-v003-rehfz	http://192.168.0.107:80	1
canarydemo-main-v003-xehv2	http://192.168.23.134:80	1

Load Balancer: wrr

♥ Health

Average response time



Total response time :

35.456865605s

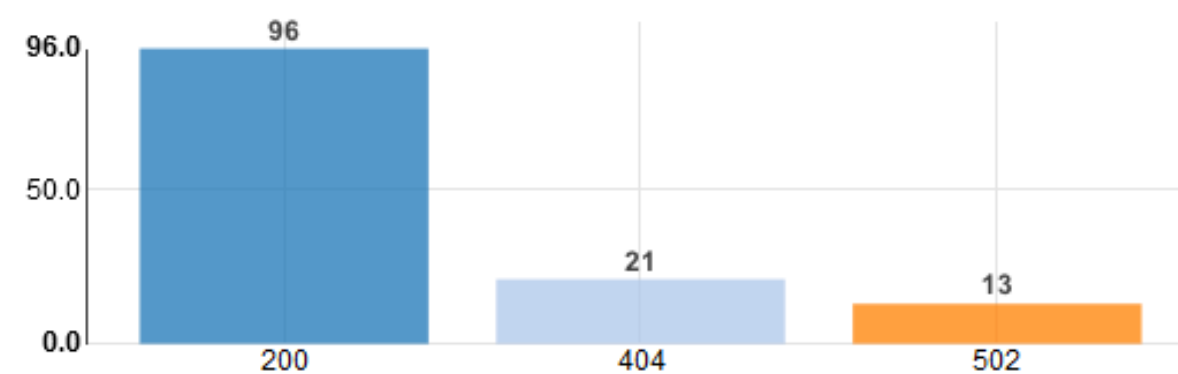
PID :

2458

Uptime :

39m6.885931127s

Total Status Code Count



Total count :

130

Count :

1

Traefik和 Kubernetes

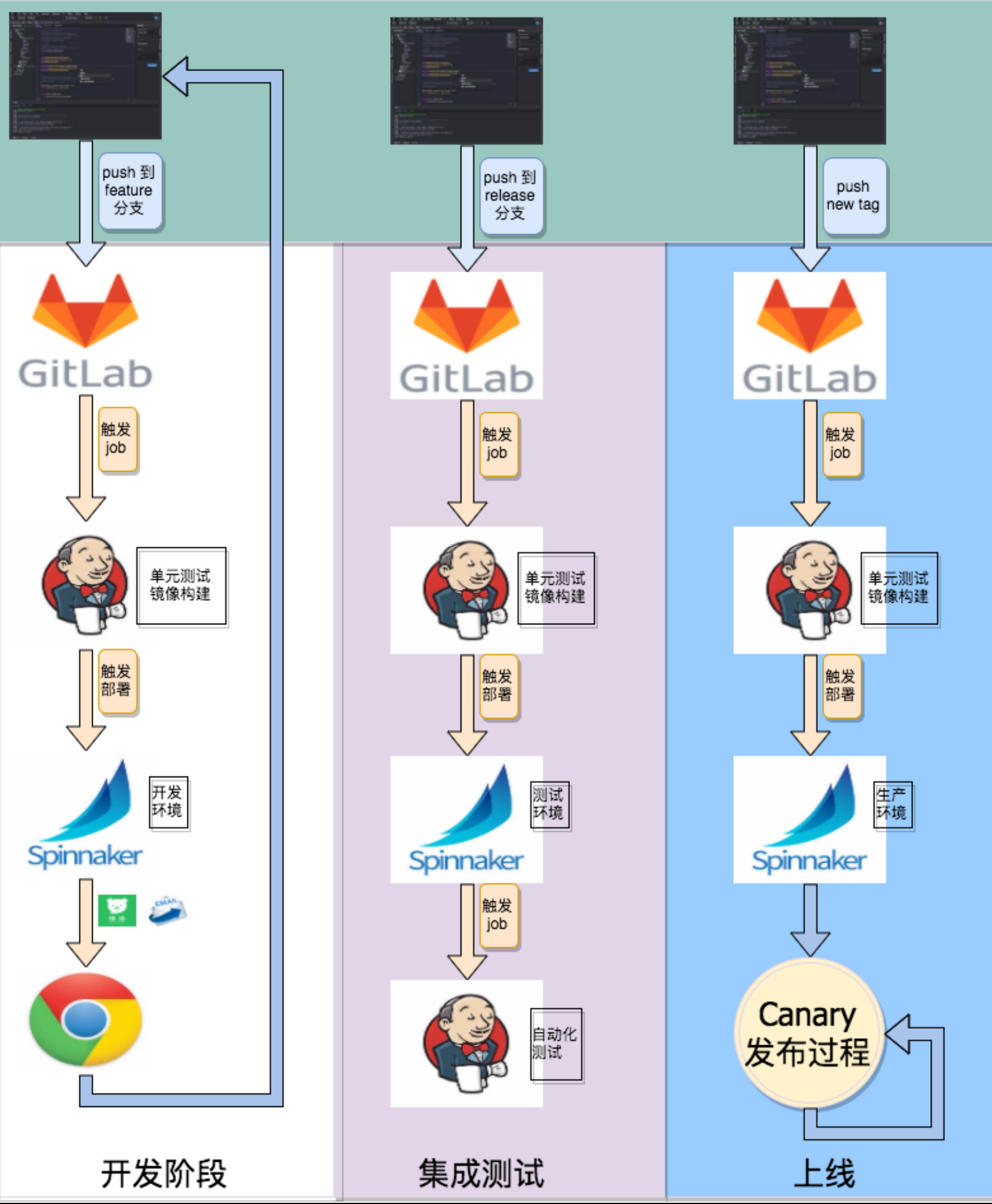
K8s集群中的Ingress Controller

动态加载ingress更新路由规则

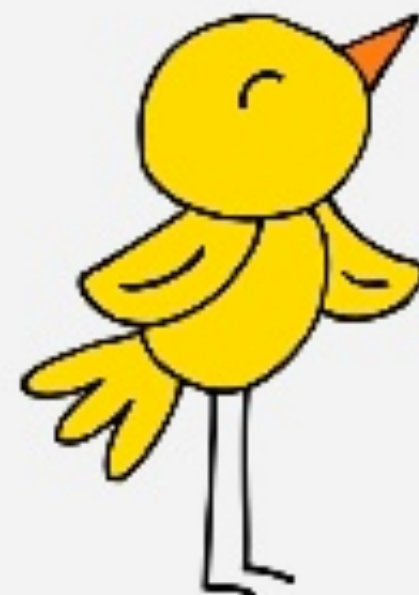
根据service的定义动态更新后端pod

根据pod的liveness检查结果动态调整可用pod

请求直接发送到pod



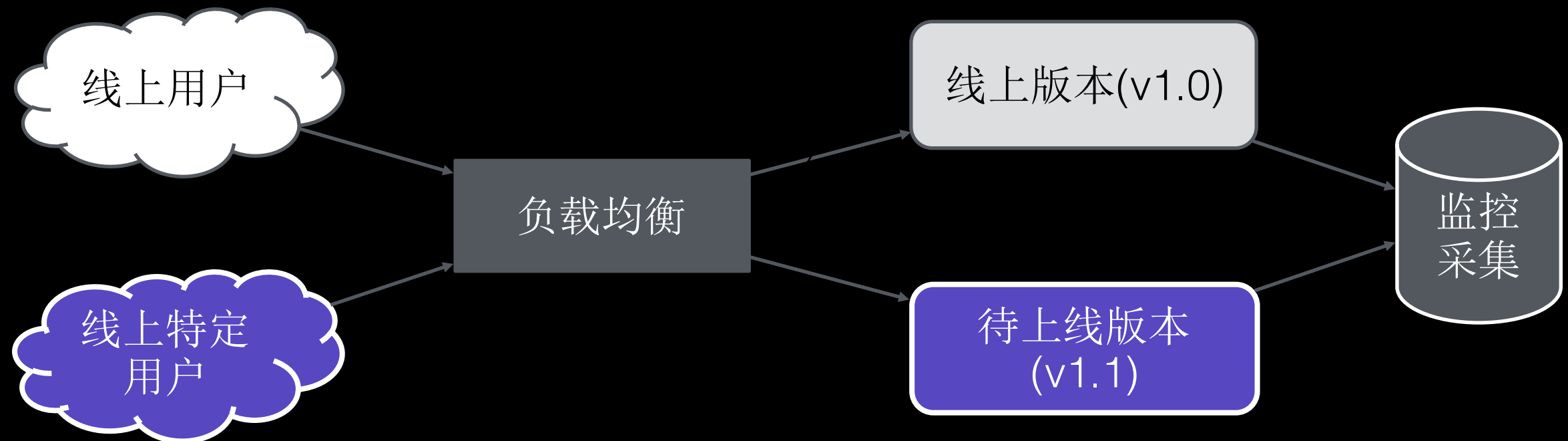
Canary Release

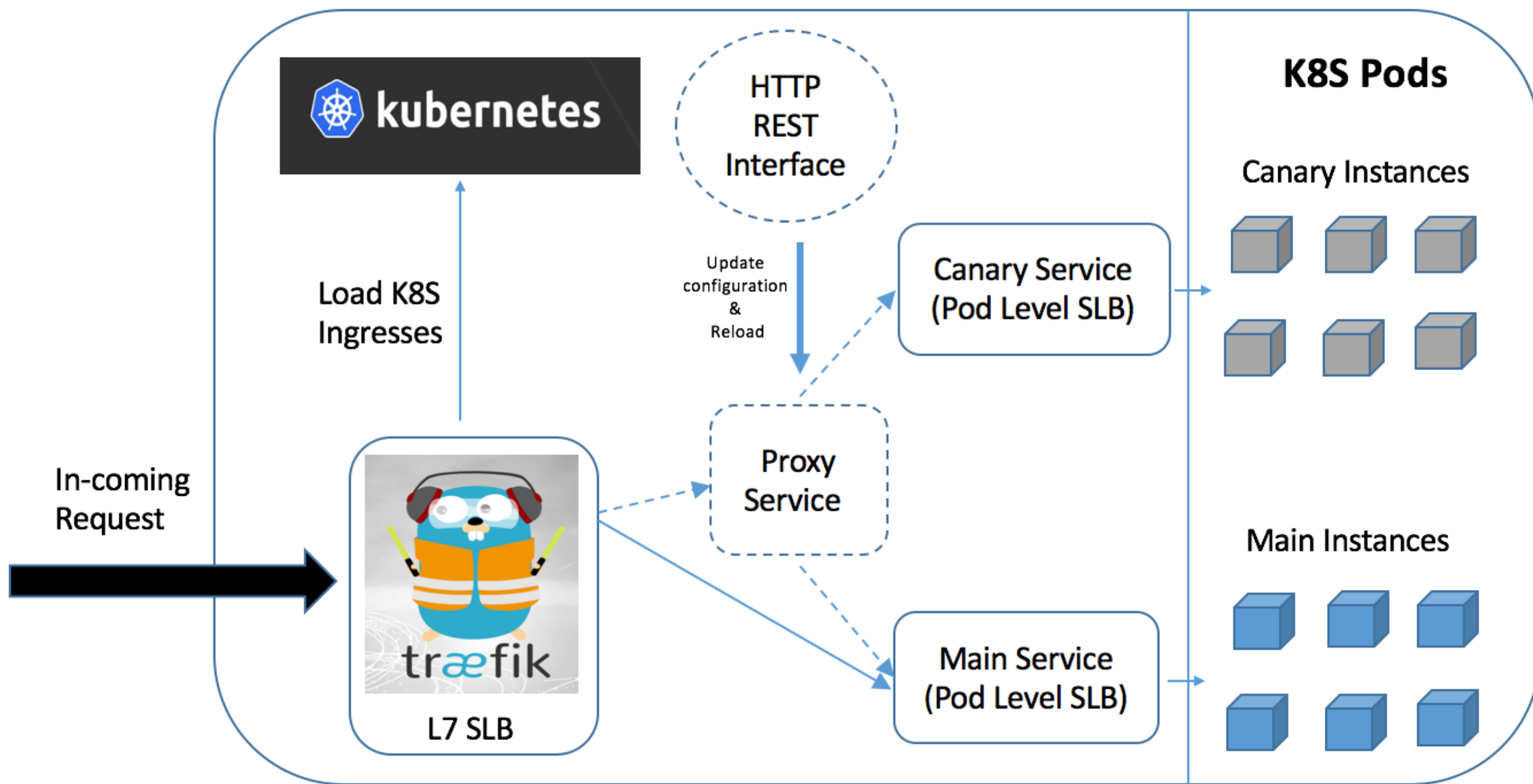


“Canary release is a technique to reduce the risk of introducing a new software version in production by slowly rolling out the change to a small subset of users before rolling it out to the entire infrastructure and making it available to everybody.”

NETFLIX

Canary





canary for office egress



```
{
  "strategy": [
    {
      "random": 1000,
      "result": [
        {
          "agent": "iPhone",
          "result": [
            {
              "ip": "192.168.1.0/24",
              "result": "canary"
            }
          ]
        }
      ]
    },
    {
      "random": 1000,
      "result": "main"
    }
  ]
}
```

以上配置指将ip段在192.168.1.0/24的一半iPhone用户灰度。

下一步

- ACA – 自动灰度分析
- 自动容量管理

